

"Complete the Following"

Ratio of Flow

1. 100 ppb = 100 mg/ton
2. Types of alkaloids are Protoalkaloids & Pseudoalkaloids
3. Exanthematous Form of Solanine toxicity is chyby leg eczema, Conjunctivitis & stomatitis
4. The sample is related to standard in TLC when they have the same colour & rate of flow (R.F)
5. Milon's test is used for detection of Carbolic acid (phenol), and it's result is Red colour
6. RT means The time pass from injection of sample & detection of compound till appearance of curve on computer (in GLC) Prussic
7. Mode of action of Prussic acid is inhibition of cytochrome oxidase enzyme and Convert Hb to Cyanol
8. TDL means the lowest dose that cause clinical or pathological alteration and twice this dose is fatal
9. Dose means total amount of toxicant recieved by animal
10. $TI = \frac{LD_{50}}{ED_{50}}$ 15-2/10
11. 15 ppb = 15 mg/Kg
12. Rabbit is resistant to atropine due to rabbits can produce an esterase that can hydrolyze atropine
13. Plants contain nicotine are N. tabacum, N. Gluaca, and N. Rostica N. tabacum N. Gluaca
14. Plants contain Cyanogenic Compounds (glycosides) are Euphorbia peplus, Linum Usitatissimum & Lathyrus
15. Toxic plants cause direct abortion are Peganum Harmala, Gossipium Barbadosense & Lupinus spp. P. G.
16. RT differ from plate to plate acc. to Purity of sample, Solubility of liquid & Type of gas used
17. Warburg's method detect O.P.C and depend on detection of units of CO₂
18. Leibermann's test detect Carbolic acid (phenol) and it's result is Deep Blue colour Dr. Jimmy



19. Toxin refers to a Poison that has a biological origin
20. Dosage means amount of toxicant per unit of animal weight
21. Hanford-Patt Strips are soaked in Mercuric Bromide, & Ethyl alcohol
22. $50 \text{ ppm} = 52 \text{ mg/kg}$
23. Plants contain solanine are S. Nigrum, S. Tuberosum, and S. Lycopersicum
24. Plants contain Coumarine are Melilotus Alba & Verbascum spp.
25. Poisonous plants affect the digestive system are
26. Stationary phase of TLC is a glass plate coated with
 - a) Adsorbent (e.g. Silica gel)
 - b) Fluorescent material → for visualization under UV rays
27. The Sample in Chromatography is distributed between 2 phases. Stationary phase & Mobile phase
28. LC₅₀ is the Conc. of Poison in Feed or water that kill 50% of exposed animals to such concentration
29. $100 \text{ ppm} = 100 \text{ mg/kg}$
30. SSM is $\frac{LD_{50}}{ED_{95}}$ (More conservative & Accurate than TI)
31. Michel's test is used in detection of chryc or PH and depend on the hydrolysis of alkaloids. And normal level of Michel's unit is 50-140 unit
32. Plants containing Atropine are Atropa Belladonna, Datura spp. & Hyoscyamus spp.
33. Malva parviflora toxicity is treated by
34. The main toxic active principle in plants are Alkaloids and Glycosides
35. LD₅₀ means the dose of Poison which kill 50% of exposed animals
36. Hazard (Risk) is the probability of chemical agent to cause harmful under specific condition of use.
37. Bromine water test is used for detection of Carbolic acid and its result is pale yellow

38. Toxic plants cause indirect abortion are &
39. The most commonly used Chromatography used by toxicologists are ^{TLC} ~~thin layer~~, ^{GLC} ~~gas~~ & ^{HPLC} ~~HPLC~~
40. Styn's test is used for detection of Cyanide (HCN/ Prussic acid) and its result is dark brown discoloration of Filter paper
41. 10 PPM = $\frac{10 \text{ mg}}{\text{Ton}}$ $10 \times 1000 = 10000$
42. The cyanogenic glycoside in linseed called
43. HN₁D means the highest dose that doesn't cause Clinical or pathological alteration
44. Active principle of Cannabis Sativa is
45. Millon's reagent consists of 3gm mercury + 27 mL Nitric acid + 30 mL D.W
46. Phet⁺ ~~Phet~~ is used for detection of Nitrates, and give blue colour if nitrate conc. was more than 2%
47. Spectrophotometric method is used for detection of o.p.c depending on production of Choline which react with the indicator Dithiobisnitrobenzoic Acid which change the colour of indicator to Yellow due to production of Thiacholine
48. Normal level of optical density (O.D) in Spectrophotometric method for detection of o.p.c is 1900 - 4000
49. is an alkaloid can resist putrefaction
50. Pseudoalkaloids are arranged in Form, and they have 2 types or
51. In Warburg test, level of o.p.c can inhibit level of ~~cholinesterase~~ and give 22.4 molecule of ~~Sec~~
52. Alkaloids present in Form
53., give milk bitter taste
54. Vitali's test is specific for, and its positive result is Colour
55. & methods are used for extraction of alkaloids
56. Spots on plate in TLC is visualized by ~~staining method~~ or ~~method~~ Dr. Jimmy [3]


"Put ✓ or x, and correct False ones"

- 1) Goat is the most susceptible animal for toxicity of Urgina Martima (.X.), Goat is most resistant (✓)
- 2) Equisetum Ramossimum contain Thiaminase enzyme (✓)
- 3) The main active principle in Papaver Rhoeas is Morphine (.X.), Rhoedine (✓)
- 4) Mephensine is the specific antidote for Strychnine (✓)
- 5) Kedd's test is used for detection of alkaloids (.X.), Glycosides (✓)
- 6) Marsh's test gives positive results with insoluble organic compounds (.X.) Soluble/Insoluble, Organic/Inorganic (✓)
- 7) Riensch's test is qualitative & quantitative test (.X.)
- 8) All alkaloids are colorless (.X.) Most (✓)
- 9) Riensch's test gives positive results with soluble organic compounds (.X.) Soluble Inorganic (✓)
- 10) The colour of antimony in Marsh's tube is orange (✓)
- 11) Arsin is the main active principle in Ricinus Communis (.X.) Arsenic (✓)
- 12) The salts of alkaloids are water soluble & unstable (.X.) water soluble & stable (✓)
- 13) Malva Parviflora contain high amount of oxalate (.X.) Nitrate (✓)
- 14) Cyanide ions react with Hb and form MethHb (✓)
- 15) Females are less susceptible for toxicity of Urgina Martima than males (.X.) more susceptible (✓)
- 16) Strychnine is a non-competitive antagonist to glycine (.X.) competitive (✓)
- 17) Marsh's test give +ve results with putrified samples (✓)
- 18) The colour of arsenic in Marsh's tube is yellow (✓)
- 19) Some alkaloids are bitter in taste (✓)
- 20) Hanford-Patt strips are soaked in Lead acetate (.X.) Lead acetate (✓)
- 21) Heating of ricin lead to loss of toxicity & antigenicity (.X.) Loss of toxicity not antigenicity (✓)
- 22) Citrullus Colocynthis is called Bitter Almond (.X.) Bitter Melon (✓)

- 23) Cyanide is excreted in form of thiocyanate (✓)
- 24) Morphine is converted to diamorphine (Heroin) by acetylation (✓)
- 25) Riensch's test give +ve results with ^{soluble inorganic} insoluble organic compounds (✓)
- 26) Samples used in Marsh's test don't need special preparation (✓)
- 27) Alkaloids react with acids to form salt & water (✓)
- 28) Alkaloids nomenclature acc. to spp. as Atropa Belladonna (✓)
- 29) Ricin is a protein in nature, so digested in stomach, so not toxic (X) Ricin is phytotoxic Toxalbumin (✓)
- 30) Pteridium Aqualinum contain anti-vitamin B₁ (✓)
- 31) Sorghum Vulgaris is safe for feeding of animals after 30 days of cultivation (✓)
- 32) Dose is the total amount of toxicant received by animal (X) Dose. ^{TDH}
- 33) Administration of twice TDL is lethal (X)
- 34) Lead toxicity ch' by severe diarrhea (✓) not
- 35) Carbolic acid toxicity is manifested by severe vomiting and contraindicated to be treated with stomach tube (X) not
- 36) Most of alkaloids are bitter in taste (✓)
- 37) Ricinus communis, Tiglium officinal & Citrillus colocynthis have direct abortifacient effect (X) Indirect abortifacient
- 38) Fox glove is used for treatment of CHF (✓)
- 39) Scilla maritima is used as rodenticide in which male rats are more sensitive than female rats (X) ♀ more susc.
- 40) Solinum spp. contain an alkaloid called Solanine (X) glycoalkaloids
- 41) Seeds are most toxic part of Aconitum Napellus (X) Roots
- 42) R.F ≥ 1 (X) R.F must be ≤ 1
- 43) Gutzeit test is Qualitative & Quantitative test used for detection of Arsenic & Antimony (X) Antimony only
- 44) Reinsch's test is qualitative & quantitative test for detection of 6 elements (X) qualitative only

"Choose the correct answer"

- 1) H_2S change the colour of antimony in Marsh's apparatus tube into (Yellow - Red - Black - orange)
- 2) Nalorphine is the specific antidote for (Atropine - Strychnine - Morphine)
- 3) Cyanide is excreted in the form of (Thiosulphate - Cyanomethaemoglobin - Thiocyanate)
- 4) Equisetum Ramossimum contain antivitamin (B₁ - B₂ - B complex - B₁₂)
- 5) Citrillus Colocynthis is called (Bitter Almond - Bitter Apple - Thorn Apple - Bitter orange)
- 6) Sorghum Vulgaris is safe for feeding of animals after (30 - 35 - 60 - 25) days
- 7) Heating of Ricin lead to loss of (Toxicity & Antigenicity - Toxicity - Antigenicity)
- 8) Styn's test used for detection of (HCl - HCN - HNO₃ - H₂SO₄)
- 9) one of these plants cause direct abortion (Ricinus Communis - Citrillus Colocynthis - Withnia Somnifera - Tiglium officinal)
- 10) LD₅₀ = ~~ED₅₀~~ أقل الجرعة القاتلة
(TI - SSN - LD₅₀ - LC)
- 11) H_2S change the colour of arsenic in Marsh's tube into (Yellow - orange - Black - Brown)
- 12) Morphine is converted to ~~codeine~~ by acetylation (codeine - Thiombine - Herbine)
- + 13) Cyanide ions react with (Cytochrome reductase - Methaemoglobin - Haemoglobin)
- 14) Malva Parviflora contain high amount of (oxalate - Nitrate - Cyanide)
- 15) The most resistant animal for toxicity of Urgina Martima is (Goat - Rabbit - Pig - Sheep)
- 16) The main Active Principle of Papaver Rheas is (Morphine - Papaverine - Herbine - Rhodine)
- 17) Mephensine is the specific antidote for (Atropine - Strychnine - Morphine)

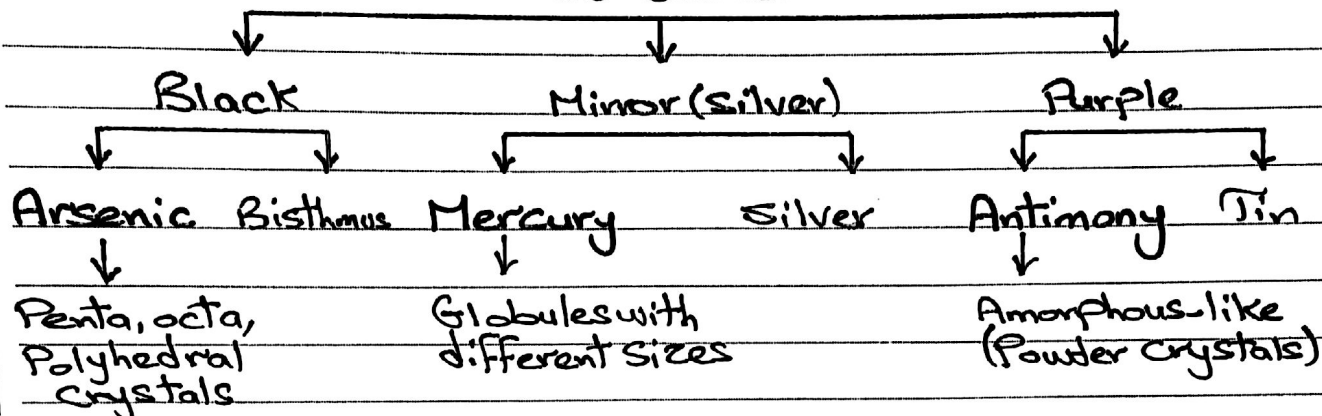
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18) The best test for detection of antimony sulphide is (Marsh's test - Riensch's test - Millon's test)

19) $LD_{50} = \frac{(TI \cdot SSN \cdot LD_{50} \cdot LC)}{ED_{50}}$

20) Marsh - Berzelius test is a qualitative & quantitative test for detection of (Arsenic - Antimony - Arsenic & Antimony)

Reinsch's Test



→ By Sublimation

Marsh - Berzelius Test


	Arsenic	Antimony
1) Site of ppt.	Just after Flame	at 2 Sides of Flame
2) Color of deposit	Bright black	Non-bright black
3) Passing on H_2S_4	Yellow colour	Orange colour
4) Shape of crystals	Penta, octa, Polyhedral Crystals	Amorphous-like (Powder Crystals)


Chromatography Techniques

	TLC	GLC	HPLC
	Thin Layer Chromatog.	Gas-Liquid Chromatography	High Performance Liquid chromat.
Stationary Phase	Glass plates coated with: 1) Adsorbent (e.g. Silica gel) 2) Fluorescent Material	Column of Solid or liquid	Column of Solid or liquid
Mobile Phase	1) Developer Tank 2) Developer (organic solvent with diff. ratios) Chloroform : Acetone : water 85 : 10 : 5	Inert Gas (He, N, Ar)	Liquid (organic solvent as chloro.)

Dr. Jimmy 

"Estimation of Corrosive Poisons"

Test	Detect	we result
1. Barium Chloride	Sulfuric acid	white ppt.
2. Silver Nitrate	Hydrochloric acid	white ppt.
3. Ferrous Sulphate	Nitric Acid	Brown Ring bet. 2 Solns.
4. Brucine Test	Nitric Acid	Red Colour
5. Centrifugation of urine Sample		Envelop-like Crystals (oxalate crystals) under microscope 
6. Resorcinol Test	oxalate (oxalic acid)	Blue ring
7. Pot. Permanganate test		Decolorization of KMnO_4
8. Millon's Test		→ Red Colour
9. Bromine Test	Carbolic acid	→ Pale Yellow ppt.
10. Leibermann's Test	(phenol)	→ Deep Blue color (phenol) N.B: Green color (cresol)
11. Styrne's Test	Hydrocyanic Acid or HCN	→ Dark Brown colour of Filter Paper
12. Prussian Blue Test	or cyanide	→ Brown ppt. dissolved to give deep blue colour
13. Vortmann's Test	or Prussic acid	→ Violet colour changed to bluish green then yellow
14. Phenylamine	Nitrates	→ Change of colour from green to blue ($>2\%$)
15. Sulfanilic acid & α -Naphthylamine	Nitrites	→ Pink colour (applied on cut surface of plant)

Dr. Jimmy 

Q / Calculate the activity of cholinesterase and interpret the results :

① $\rightarrow \text{pH } N_1 = 7.4$, $\text{pH } N_2 = 4.0$

$\rightarrow \text{pH } T_1 = 7.4$, $\text{pH } T_2 = 6.5$

Normal 90-140

$\rightarrow \text{pH } B_1 = 7.4$, $\text{pH } B_2 = 7.4$

Answer:

$$(\Delta N_1 - N_2) - (T_1 - T_2) \times 100$$

$$(7.4 - 4) - (7.4 - 6.5) \times 100$$

$$3.4 - .9 \times 100 = 2.5 \times 100 = 250$$

= +ve OPC toxicity

② $\text{pH } N_1 = 7.3$, $\text{pH } N_2 = 4.5$

$\text{pH } T_1 = 7.3$, $\text{pH } T_2 = 5.5$

$\text{pH } B_1 = 7.3$, $\text{pH } B_2 = 7.3$

Answer:

③ $\text{pH } N_1 = 7.3$, $\text{pH } N_2 = 4.2$

$\text{pH } T_1 = 7.3$, $\text{pH } T_2 = 6.7$

$\text{pH } B_1 = 7.3$, $\text{pH } B_2 = 7.3$

Answer:

Dr. Jimmy



3) $\text{pH}_{N1} = 7.4$, $\text{pH}_{N2} = 4.0$
 $\text{pH}_{T1} = 7.4$, $\text{pH}_{T2} = 6.6$
 $\text{pH}_{B1} = 7.4$, $\text{pH}_{B2} = 7.2$

$(\Delta N - \Delta B) - (\Delta T - \Delta B) \times 1000$

Q/ Calculate O.D if you have these results

Time : 0 sec. / 30 sec. / 1 min. / 1.5 min. / 2 min.

O.D : 0.22 / 0.22 / 0.27 / 0.32 / 0.38

and interpret results ?!!

↓ 1400 - 4000
 OPC

$0.06 \times 23400 = 1700$

Dr. Jimmy